



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b>  <b>G01N 33/53</b>	<b>A2</b>	<b>(11) International Publication Number:</b> <b>WO 99/61909</b>  <b>(43) International Publication Date:</b> 2 December 1999 (02.12.99)
<b>(21) International Application Number:</b> PCT/US99/11407  <b>(22) International Filing Date:</b> 26 May 1999 (26.05.99)  <b>(30) Priority Data:</b> 60/086,695      26 May 1998 (26.05.98)      US  <b>(71) Applicant (for all designated States except US):</b> THE GOVERNMENT OF THE UNITED STATES OF AMERICA, as represented by THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES [US/US]; Centers for Disease Control and Prevention, Technology Transfer Office, Executive Park, Building 4, Suite 1103, Atlanta, GA 30329 (US).  <b>(72) Inventor; and</b> <b>(75) Inventor/Applicant (for US only):</b> PAU, Chou-Pong [US/US]; 1142 Vistavia Circle, Decatur, GA 30033 (US).  <b>(74) Agents:</b> KULKARNI, Sima, Singadia et al.; Jones & Askew, LLP, 2400 Monarch Tower, 3424 Peachtree Road, N.E., Atlanta, GA 30326 (US).		<b>(81) Designated States:</b> AU, CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>Without international search report and to be republished upon receipt of that report.</i>
<b>(54) Title:</b> METHODS AND COMPOSITIONS FOR THE DETECTION OF HUMAN HERPESVIRUS  <b>(57) Abstract</b>  Compositions and methods for the detection and diagnosis of infectious diseases are provided. In particular, efficient and sensitive compositions and methods for the detection of human herpesvirus 8 are provided. The claimed diagnostic compositions and methods involve the use of peptides representative of dominant antigenic regions of human herpesvirus in detection assays. Such assays are highly specific, sensitive and accurate.		

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## Claims

1. A method of detecting the presence human herpesvirus 8 in a biological sample, said method comprising:

5 (a) contacting one or more isolated, immunogenic human herpesvirus 8 peptides with an antibody-containing biological sample, and

10 (b) detecting the formation of a complex between the immunogenic peptide and the antibody wherein the presence of a peptide-antibody complex indicates the presence of human herpesvirus 8.

15 2. The method of Claim 1, wherein the immunogenic peptide comprises an amino acid sequence selected from the group consisting of SEQ ID NOS: 1-53, and conservative variations thereof.

20 3. The method of Claim 2, wherein the immunogenic peptide comprises an amino acid sequence selected from the group consisting of SEQ ID NOS: 5, 6, 19, 22, 23, 24 and 25 and conservative variations thereof.

25 4. The method of Claim 1, wherein the peptide is bound to a solid phase.

5. The method of Claim 1, wherein the peptide is labeled.

30 6. The method of Claim 5, wherein the label is selected from the group consisting of an electrochemiluminescent label, a chemiluminescent label, an enzymatic label, a bioluminescent label, and a fluorescent label.

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7. The method of Claim 1, further comprising incubating the peptide-antibody complex with a second antibody specific for the peptide, wherein the second antibody is labeled with a detectable label and binds to the peptide-antibody complex.

8. The method of Claim 7, wherein the label is selected from the group consisting of an electrochemiluminescent label, a chemiluminescent label, an enzymatic label, a bioluminescent label, and a fluorescent label.

9. The method of Claim 1, wherein the biological sample comprises wounds, blood, tissues, saliva, semen, tears, urine, bone, muscle, cartilage, or skin.

10. An immunogenic composition comprising a pharmaceutically acceptable carrier and an isolated, immunogenic human herpesvirus 8 peptide in an amount sufficient to induce a protective immune response to human herpesvirus 8 in a mammal, said immunogenic peptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOS: 1-53, and conservative variations thereof.

11. The composition of Claim 10, wherein the immunogenic peptide comprises an amino acid sequence selected from the group consisting of SEQ ID NOS: 5, 6, 19, 22, 23, 24 and 25 and conservative variations thereof.

12. The composition of Claim 10, wherein the immunogenic peptide is conjugated to a carrier protein.

13. An isolated, immunogenic human herpesvirus 8 peptide, said immunogenic peptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOS: 1-53, and conservative variations thereof.

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14. The immunogenic peptide in accordance with claim 11, wherein said immunogenic peptide binds to an antibody specifically immunoreactive with a peptide selected from the group consisting of SEQ ID NOS: 1-53, and conservative variations thereof.

15. The immunogenic peptide in accordance with claim 11, wherein said immunogenic peptide is used to detect the presence of human herpesvirus 8 antibodies in a biological sample comprising wounds, blood, tissues, saliva, semen, tears, urine, bone, muscle, cartilage, or skin.

16. An isolated antibody capable of binding to a human herpesvirus 8 immunogenic peptide.

17. The isolated antibody of Claim 16, wherein the immunogenic peptide comprises an amino acid sequence selected from the group consisting of SEQ ID NOS: 1-53, and conservative variations thereof.

18. The isolated antibody of Claim 16, wherein the immunogenic peptide comprises an amino acid sequence selected from the group consisting of SEQ ID NOS: 5, 6, 19, 22, 23, 24 and 25 and conservative variations thereof.

19. The isolated antibody of Claim 16, wherein the antibody is isolated from a biological sample comprising wounds, blood, tissues, saliva, semen, tears, urine, bone, muscle, cartilage, or skin.

20. The isolated antibody of Claim 16, wherein the antibody is a monoclonal antibody.

-1-

## SEQUENCE LISTING

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SUBSTITUTE SHEET (RULE 26)

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&lt;211&gt; 34

&lt;212&gt; PRT

&lt;213&gt; Human Herpesvirus Type 8

&lt;400&gt; 3

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&lt;211&gt; 31

&lt;212&gt; PRT

&lt;213&gt; Human Herpesvirus Type 8

&lt;400&gt; 4

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&lt;211&gt; 31

&lt;212&gt; PRT

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SUBSTITUTE SHEET (RULE 26)

WEST

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SUBSTITUTE SHEET (RULE 26)

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<212> PRT

<213> Human Herpesvirus Type 8

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SUBSTITUTE SHEET (RULE 26)

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&lt;212&gt; PRT

&lt;213&gt; Human Herpesvirus Type 8

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&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Human Herpesvirus Type 8

&lt;400&gt; 24

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&lt;212&gt; PRT

&lt;213&gt; Human Herpesvirus Type 8

&lt;400&gt; 25

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SUBSTITUTE SHEET (RULE 26)

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SUBSTITUTE SHEET (RULE 26)

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&lt;210&gt; 32

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Human Herpesvirus Type 8

&lt;400&gt; 32

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&lt;210&gt; 33

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Human Herpesvirus Type 8

&lt;400&gt; 33

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&lt;210&gt; 34

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Human Herpesvirus Type 8

&lt;400&gt; 34

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&lt;210&gt; 35

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Human Herpesvirus Type 8

&lt;400&gt; 35

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&lt;210&gt; 36

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Human Herpesvirus Type 8

&lt;400&gt; 36

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&lt;210&gt; 37

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Human Herpesvirus Type 8

&lt;400&gt; 37

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